

## ucloud server 『Snapshot/Image/Create Volume』 Service Manual

# I. Information on Service

This chapter describes service on how to restore (newly create) VM (Virtual Machine) by using snapshot and images created with snapshot and how to attach/detach VM by creating additional volume. Major functions and characteristics are introduced.

## 1. Service outline

'Snapshot' has a function of saving the current state of VM disk volumes, making a user return to the saved

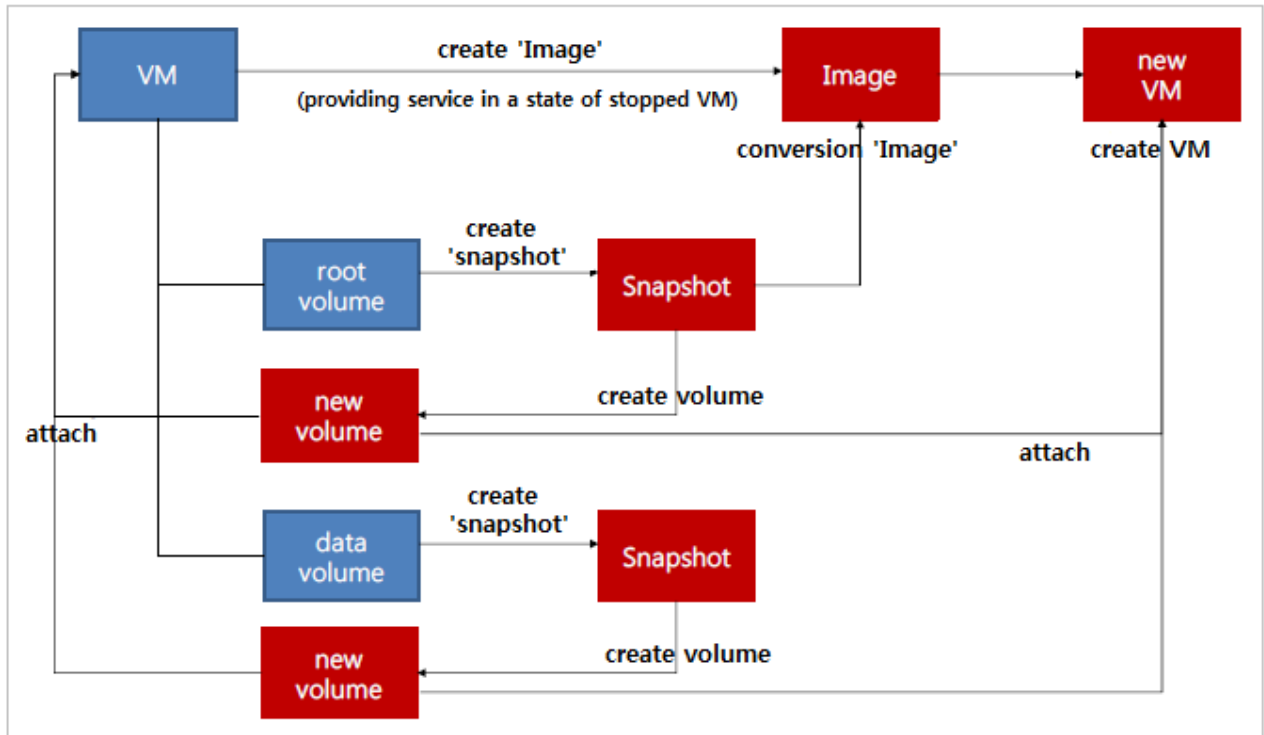
state of snapshot whenever required and enabling creation of image and volume. Information on VM can be backed up and restored in a short time and all the settings and data of server can also be saved.

'Image' is service enabling VM to be newly composed with the same state in creating image or snapshot.

'Create volume' is service to create (add) a new volume by using created snapshot and to attach/detach to VM to be used.

### 1.1 Major functions

- **Creting root of ucloud server(VM), data disk volume 'snapshot'**
  - First snapshot on volume is subject to Full snapshot, from second one to Incremental snapshot.
  - Full snapshot is again executed on every eighth one in the same volume later on.
  - Example: 1st time (Full snapshot), 2nd ~ 7th (Incremental snapshot), 8th (Full snapshot), 9th ~ 14th (Incremental snapshot), 15th (Full snapshot) ...
- **User 'image' creation**
  - Image can be created with created snapshot.
  - Image can also be created directly from VM.
- **VM creation with user 'image'**
  - Multiple, identical VM can be created with created image.
- **'Volume' creation**
  - Volume can be created with created snapshot.
- **VM attach of created 'volume'**
  - Created volume can be attached to/detached from VM.



## II. Service screen setting

This chapter guide use of Snapshot/Image service on ucloud portal.

### 1. Creating 'Snapshot'

Go to "Cloud Console" → "ucloud server" → "Cloud Server" to create snapshot.

After selecting server for snapshot creation, click "Snapshot" at the bottom right.

※ Warning: Since snapshot is function for backing up VM volume as virtual disk image, contents on memory of VM or on CPU are not saved. It is recommended to perform operations of snapshot creation with stopped VM for stable snapshot creation.

After entering name of snapshot to be created, click OK button.

Since then, creation of snapshot is operated and you can check the results on "My Snapshot" menu.

Upon completion of creation, the state changes from 'Creating' → 'Use.'



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**ucloud server**

1

Current State of Service

**Cloud Server**

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**Service Rate**  
1 USD : 1119 Won  
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**Cloud server**

Select Accountartoflife3@naver.comadd a server

Select StateTotalServer Namesearch

2

Type	Server Name	OS	State	Specification (CPU, RAM)	Console
server	123	Other PV (64-bit)	use	4 vCore, 4.00 GB	How
server	testServer2	SUSE Linux Enterprise Server 11 (32-bit)	use	1 vCore, 1.00 GB	How

startstoprebootdeletedeletechange P/Wchange charge plan

Explanation

Server Name	123 (11daa9fa-c5bc-4cc3-9750-2f6a0245d364)	change	Address of Internal IP	172.27.194.215	setup port forwarding
Date of Creation	09/23/2012 16:05:50		Plan	Monthly Plan	
CPU	4 vCore, 2.00 GHz		Memory	4.00 GB	
OS	Other PV (64-bit)		State	use	
Disk	Total 100.00 GB	add Disk	Classification	server	3

Name	Type	Capacity	Date of Creation	Create Snapshot/Image
ROOT-40880	Root	20.00 GB	09/23/2012 16:05:51	Snapshot이미지
DATA-40880	Data	80.00 GB	09/23/2012 16:05:51	Snapshot

HAIn Usestartstop

**Create Snapshot**

ROOT-40880's snapshot is created.  
Enter Snapshot Name

Snapshot Name

\* Only include combination of English alphabet, numbers, '.', '-', and '\_' are enterable with 3-50 letters.

**Create Snapshot**

It takes approximately 20 minutes on the 10GB basis of actual reserve of volume size.  
You will be notified via email upon completion.

Would you create?

**confirm** **cancel**

**Create Snapshot**

Snapshot creation request is completed.  
You can check the created snapshot on My Snapshot menu.

**confirm**

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## ucloud server

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## My Snapshot

Select Account ife3@naver.com

<input type="checkbox"/>	Server Name	Volume Name	Snapshot name	State	Date of Creation
<input checked="" type="checkbox"/>	testhojin	testhojinDisk	testSnapshot	use	2012-09-21 12:03
<input type="checkbox"/>	testhojin	ROOT-40726	testSnapshot	use	2012-09-21 12:18

Creating Image Change the snapshot name Create Disk delete

## Explanation

ID	30d2d46d-26d6-42bd-b1e5-f5f94f1fa1a7	Snapshot Type	data volume
Volume Size(GB)	50.00 GB	OS Type	SUSE Linux Enterpris

State is shown as 'Waiting' and it is changed into "Use" upon completion of snapshot creation.

※ **Warning:** Please refer to from page 14 of this manual or 'Creation and restoration guide of snapshot on Data volume composed with Linux LVM' on Customer Center → Library for creation and restoration of snapshot on data volume composed with Linux LVM.

## 2. Direct creation of 'Image' on VM

'Image' on root volume can be directly created from VM.

※ **Warning: The service available only when VM is stopped.**

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### Cloud server

Select Account

**add a server**

Select State

Server Name

**search**

Type	Server Name	OS	State	Specification (CPU, RAM)	Console View
server	123	Other PV (64-bit)	use	4 vCore, 4.00 GB	
server	testServer2	SUSE Linux Enterprise Server 11 (32-bit)	stop	1 vCore, 1.00 GB	

**start**

**stop**

**reboot**

**delete**

**change P/W**

**change charge plan**

#### Explanation

Server Name	testServer2 (1140696d-9f62-4534-bc63-901519ccac12)	<b>change</b>	Address of Internal IP	172.27.132.107	<b>setup port forwarding</b>
Date of Creation	09/21/2012 13:49:33		Plan	Monthly Plan	
CPU	1 vCore, 2.00 GHz		Memory	1.00 GB	
OS	SUSE Linux Enterprise Server 11 (32-bit)		State	stop	
Disk	Total 150.00 GB	<b>add Disk</b>	Classification	server	

Name	Type	Capacity	Date of Creation	Create Snapshot/Image
dd	Data	50.00 GB	09/23/2012 13:11:16	<b>Snapshot</b>
ROOT-40748	Root	20.00 GB	09/21/2012 13:49:33	<b>Snapshot</b> <b>이미지</b>
DATA-40748	Data	80.00 GB	09/21/2012 13:49:33	<b>Snapshot</b>

※ **Root disk image creation can be processed after putting a stop.**

Refer to the following guide in [3. Creating user 'image' on created snapshot](#) for subsequent procedures.

## 3. Creating user 'image' on created snapshot

You can create user image with created snapshot.

After selecting snapshot to create image (root disk taken as snapshot, available only for volumes named ROOT-) and clicking "Create Image," create user image.

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**My Snapshot**

Select Accountartoflife3@naver.com

<input type="checkbox"/>	Server Name	Volume Name	Snapshot name	State	Date of Creation
<input type="checkbox"/>	testhojin	testhojinDisk	testSnapshot	use	2012-09-21 12:03
<input checked="" type="checkbox"/>	testhojin	ROOT-40726	testSnapshot	use	2012-09-21 12:18

**Creating Image**Change the snapshot nameCreate Diskdelete

**Explanation**

ID	90836ad1-a73d-4320-b20e-a6f01b13539c	Snapshot Type	root volume
Volume Size(GB)	20.00 GB	OS Type	SUSE Linux Enterpris
Snapshot Size(GB)	1.95 GB		

After entering name of image to be used, click OK button.

**Create Image**

Image of snapshot testdd is created.  
Please enter the name of image.

Image Name

\* Only include combination of English alphabet, numbers, '.', '-', and '\_' are enterable with 3-32 letters.

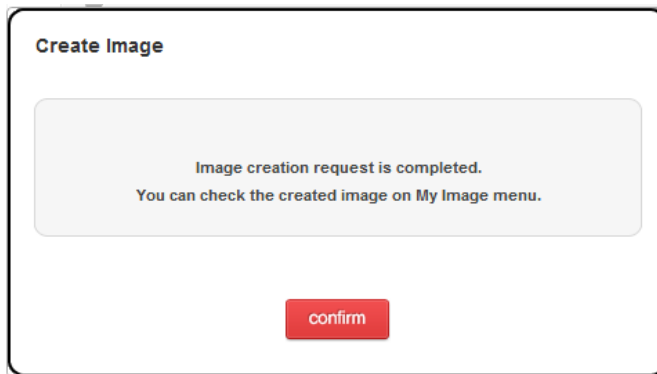
confirmcancel

**Create Image**

It takes approximately 20 minutes on the 10GB basis of actual reserve of volume size ,  
and the completion will be notified via email.

Would you create?

confirmcancel



You can check the created image on 'My Image' menu.

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**My Image**

Select Accountartoflife3@naver.com

Image Name	OS Type	State	Date of Creatio	Volumn Size (GB)	public ownership Setting
capimg	Fedora release 13 64 bit	waiting	2012-09-26 16:49	20.00 GB	Closed
testImage1234	SUSE Linux Enterprise Server11	in use	2012-09-21 12:27	20.00 GB	Sharing

Server Application

Change the image name

delete

State is shown as 'Waiting' and it is changed into "Use" upon completion of image creation.

## 4. 'Create Volume' service on created snapshot

You can create volume (Disk) with created snapshot.

After selecting snapshot for volume (Disk) creation and clicking 'Create Disk' button, create volume.



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My Snapshot

Select Account artoflife3@naver.com

<input type="checkbox"/>	Server Name	Volume Name	Snapshot name	State	Date of Creation
<input checked="" type="checkbox"/>	testhojin	testhojinDisk	testSnapshot	in use	2012-09-21 12:03
<input type="checkbox"/>	testhojin	ROOT-40726	testSnapshot	in use	2012-09-21 12:18

Creating Image

Change the snapshot name

Create Disk

delete

Details

ID	30d2d46d-26d6-42bd-b1e5-f5f94f1fa1a7	Snapshot Type	data volume
Volume Size(GB)	50.00 GB	OS Type	SUSE Linux Enterpris
Snapshot Size(GB)	2.11 MB		

Enter plan options (monthly or hourly rate) and storage name.  
Volume (Disk) capacity is sized as same as that of disk creating snapshot.



## Volume storage applications

**01**

Select Volume storage

**02**

Completed

### Select Product

(VAT Excluded)

Select	Classification	Price
<input checked="" type="radio"/>	Monthly Plan	per 10GB (1,200won/month)
<input type="radio"/>	Hourly Plan	per 10GB (26won/10hours)

Storage Capacity 10.00 GB

Storage Name

confirm

Only English alphabet and numbers enterable (25Byte)

cancel

next

After checking duplication, select Next.

## Volume storage applications

01

Select Volume storage

02

Completed

### Request Storage

Storage Name

capdd

### Rate of Product Use

(VAT Excluded)

Storage Capacity	Plan Request Details	Payment Amount
50.00 GB	Monthly Plan	6,000won/month

previous

submit

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**Disk**

Select Account
artoflife3@naver.com
add a storage

Select State
Total
Disk Name
search

Type	Disk Name	Applied Server	State	Capacity (In Use/Available)
server	capdd	--	detach	50.00 GB
server	ROOT-41435	capdd	connect	20.00 GB
server	DATA-41435	capdd	connect	80.00 GB
server	ROOT-41434	capimage2	connect	20.00 GB
server	DATA-41434	capimage2	connect	80.00 GB

State is shown as 'Creating' and it is changed into 'Separation' upon completion of volume (Disk) creation.

You can use the created volume (Disk) by attaching to server (VM) you want with 'Connect to Server' menu as below.

## 5. Creating VM by utilizing user image

You can create VM with created user image.

Service Highlight | Order Now | Support

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**My Image** | Select Account: artolife3@naver.com

Image Name	OS Type	State	Date of Creatio	Volume Size (GB)	public ownership Setting
testImage1234	SUSE Linux Enterprise Server11	in use	2012-09-21 12:27	20.00 GB	Sharing

**Server Application** | Change the image name | delete

**Details**

Image ID	08d963e4-1f73-4d37-846d-599f6c231bf2
Image Size(GB)	1.95 GB
Snapshot Name	testSnapshot

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After selecting image on the list of create images to create VM, click "Request Server" button.

OS type is selected the same with image type.

Request VM creation by entering server stipulation, server specification and server name.

Subsequent operations of server creation are identical with those of ucloud server creation.

Go to "Cloud Server" page, check creation state of requested VM, and get password for VM returned.

※ Although identical VM is created, Private IP and part of VM's config information is subject to change.

## Apply cloud server



01

Select cloudserver

02

Confirm

## OS spec

(VAT excluded)

Classification	Type	Price	
		monthly plan	hourly plan
Default OS	SUSE Linux Enterprise Server11 SP1 32bit	130000 won/month	217 won/hour

## Select server

☒ Monthly Plan
 ☐ hourly plan

(VAT excluded)

Select	CPU	RAM	Default Storage	Price(Unit:won/month)
<input type="radio"/>	1 vCore	1.00 GB	100GB	30,000won
<input type="radio"/>	1 vCore	2.00 GB	100GB	40,000won
<input type="radio"/>	2 vCore	2.00 GB	100GB	60,000won
<input type="radio"/>	2 vCore	4.00 GB	100GB	75,000won
<input type="radio"/>	2 vCore	8.00 GB	100GB	110,000won
<input type="radio"/>	4 vCore	4.00 GB	100GB	105,000won
<input type="radio"/>	4 vCore	8.00 GB	100GB	140,000won
<input type="radio"/>	4 vCore	16.00 GB	100GB	200,000won
<input type="radio"/>	8 vCore	8.00 GB	100GB	190,000won
<input type="radio"/>	8 vCore	16.00 GB	100GB	250,000won
<input type="radio"/>	8 vCore	32.00 GB	100GB	380,000won
<input type="radio"/>	12 vCore	16.00 GB	100GB	350,000won
<input type="radio"/>	12 vCore	32.00 GB	100GB	480,000won

Apply cloud server

01  
Select cloudserver

02  
Confirm

Check for Service History

(Unit : won/month, VAT excluded)

Classification	Option		Price	
OS	My Image	SUSE Linux Enterprise Server11 SP1 32bit	130000 won/month	
Server	CPU	4 vCore	105,000won/month	
	RAM	4.00 GB		
	Default Stroage	100GB		
Plan Request Details		You selected the product above as monthly plan.		
tmpLinuxServer		capdd		

Billed

235,000won/month

Would you request a cloud server with selected details above?

previous

submit

Check Cloud Server Request

Would you request a cloud server?

- Notices -

Default password is created in creating server.  
Please wait until the completion of creation.  
It may take **10** minutes at maximum to create a server.

\* Password will be sent when creation of cloud server is completed.

\* You can access to the created server after setting up port forwarding.

OK

Cancel



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1 USD : 1119 Won  
(Sep 25, 2012)

**Cloud server**  
Select Account  **add a server**  
  
Select State  Server Name  **search**  

Type	Server Name	OS	State	Specification (CPU, RAM)	Console View
server	capdd	SUSE Linux Enterprise Server 11 (32-bit)	starting	4 vCore, 4.00 GB	
server	capimage2	CentOS 5.4 (32-bit)	in use	1 vCore, 1.00 GB	
server	testImage	SUSE Linux Enterprise Server 11 (32-bit)	stopped	1 vCore, 1.00 GB	
server	123	Other PV (64-bit)	in use	4 vCore, 4.00 GB	
server	testServer2	SUSE Linux Enterprise Server 11 (32-bit)	stopped	1 vCore, 1.00 GB	

**Details**  

Server Name	capdd (d66a4c1d-6298-42fd-a380-9cea4be889b0) <input type="button" value="change"/>	Address of Internal IP	172.27.156.220 <input type="button" value="setup port forwarding"/>
Date of Creation	09/26/2012 16:23:05	Plan	Monthly Plan
CPU	4 vCore, 2.00 GHz	Memory	4.00 GB
OS	SUSE Linux Enterprise Server 11 (32-bit)	State	starting
Disk	Total 100.00 GB <input type="button" value="add Disk"/>	Classification	server

Name	Type	Capacity	Date of Creation	Create Snapshot/Image
ROOT-41435	Root	20.00 GB	09/26/2012 16:23:05	

## Creation and restoration guide of snapshot on Data volume composed with Linux LVM

### ☐ How to compose LVM on ucloud server

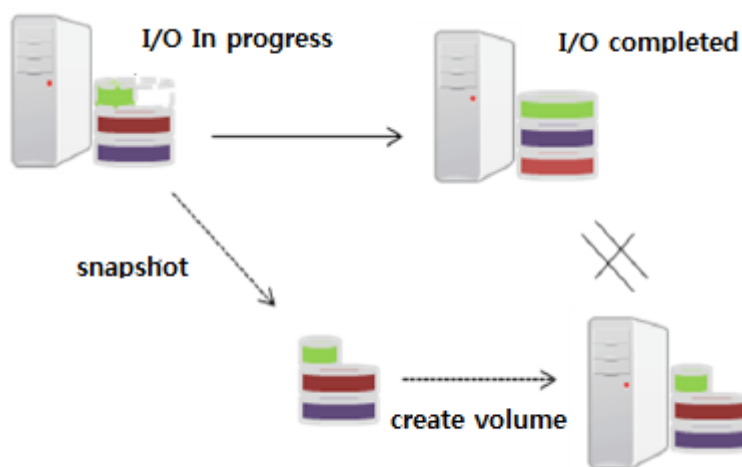
- 20GB of ROOT Disk and 80GB of Data Disk are provided upon Linux VM creation by default. If additional Data Disk is needed, maximum five disks with 300GB can be attached to one VM.
- It is OK to make individual File system on each Data Disk but LVM is composed and used if bigger space is needed on single mount point.

**How to compose LVM** (Refer to ucloud server user manual.)

[https://ucloudbiz.olleh.com/en-us/manual/ucloud\\_server\\_UserManual\\_v2.1.pdf](https://ucloudbiz.olleh.com/en-us/manual/ucloud_server_UserManual_v2.1.pdf)

### □ Creation and restoration of snapshot on LVM

- By using snapshot function of ucloud server, backup of Disk at a particular timing and copy of identical Disk on the created snapshot basis can be created. When using by composing LV with various Disks, restoration of snapshot-based volume can be performed only if snapshots are simultaneously created on each Disk.
- For creating restorable snapshots, compatibility should be maintained by stopping VM or unmounting LV so that there is no IO.



[Figure 1] Compatibility problem of data occurs when creating Snapshot during I/O process.

### □ How to restructure LVM volume

- If snapshots composed with LVM are attached to volume, you can check the relevant LV through `lvdisplay`. If the relevant LV cannot be used because it is not active, you can use it by making active with the command of `lvchange`.
- `lvchange -ay /dev/your_lvm/lvm_name`

### □ Notices for creating snapshot and volume of LVM

- As in [Figure 1], compatibility problem occurs in restoration if snapshot is executed during I/O occurrence. **For creating restorable snapshots** by meeting compatibility conditions, it should be **progressed when LV is unmount and IO does not occur. Snapshots should be created to all disks composed with LVM** at this time.
- When mounting LVM snapshot volume on the same VM, errors occur due to metadata



duplication. (Found duplicate PV uuid: using /dev/xx not /dev/yy) Disk cannot be normally operated when the message appears. Therefore, mount an existing disk after detaching.

- LVM disable in Detaching (lvchange -an /dev/your\_lvm/lvm\_name)

## ☐ Others

### How to remove LVM volume

▪ Used LV should be inactivated as below to normally detach volume.

☐ umount

```
[root@TestServer /]# mount
/dev/mapper/VolGroup00-LogVol00 on / type ext3 (rw)
proc on /proc type proc (rw)
sysfs on /sys type sysfs (rw)
devpts on /dev/pts type devpts (rw,gid=5,mode=620)
/dev/xvda1 on /boot type ext3 (rw)
tmpfs on /dev/shm type tmpfs (rw)
none on /proc/sys/fs/binfmt_misc type binfmt_misc (rw)
sunrpc on /var/lib/nfs/rpc_pipefs type rpc_pipefs (rw)
/dev/mapper/TestVG-backup on /backup type ext3 (rw)
[root@TestServer /]# umount /backup
[root@TestServer /]# mount
/dev/mapper/VolGroup00-LogVol00 on / type ext3 (rw)
proc on /proc type proc (rw)
sysfs on /sys type sysfs (rw)
devpts on /dev/pts type devpts (rw,gid=5,mode=620)
/dev/xvda1 on /boot type ext3 (rw)
tmpfs on /dev/shm type tmpfs (rw)
none on /proc/sys/fs/binfmt_misc type binfmt_misc (rw)
```

```
sunrpc on /var/lib/nfs/rpc_pipefs type rpc_pipefs (rw)
```

After checking an existing, mounted LV with the command of mount, umount it. Check it is umount with the command of mount again.

☐ lvchange

```
[root@TestServer /]# lvchange -a n /dev/TestVG/backup
```

Change state of LV by entering 'lvchange -a n LV route'.

☐ Disconnect from disk server





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**Disk**

Select Account ar@naver.com add a storage

Select State Total Disk Name  search

Type	Disk Name	Applied Server	State	Capacity (In Use/Available)
<span>server</span>	ROOT-41420	testImage	<span>connect</span>	20.00 GB
<span>server</span>	DATA-41420	testImage	<span>connect</span>	80.00 GB
<span>server</span>	ROOT-40880	123	<span>connect</span>	20.00 GB
<span>server</span>	DATA-40880	123	<span>connect</span>	80.00 GB
<span>server</span>	dd	testServer2	<span>connect</span>	50.00 GB

attach to server **detach from server** delete change charge plan

Details

Disk Name	dd	Plan	Monthly Plan
Applied Server	testServer2	Date of Creation	09/23/2012 13:11:16
Capacity	50.00 GB	Classification	server

Management console > Disk > Select the relevant disk > Click Disconnect from Server button

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**Disk**

Select Account artoflife3@naver.com add a storage

Select State Total Disk Name  search

Type	Disk Name	Applied Server	State
<span>server</span>	ROOT-41420	testImage	<span>connect</span>
			<span>connect</span>
			<span>connect</span>
			<span>connect</span>

**Disconnect from Server**

Would you disconnect from the cloud server?

release cancel

Applied Server testServer2 | Date of Creation | 09/23/2012 13:11:16 |

Disconnect the connected disk by clicking 'Make Cancellation.'